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Scientific support for business with implementing circular economy for enhanced competitiveness and sustainability

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Circular economy is a promising approach towards maximising value by increasing resource productivity, enhancing energy efficiency, lowering resource consumption and decreasing waste. The idea central to circular economy is to move away from linear practices and "take-make-use-dispose" approaches. Instead, industrial systems should continue to extract value from resources by extending their productive lifetimes. This can be achieved through material 'cycling', thinking of recycling, cascading and industrial symbiosis, or product 'cycling' by applying such tactics as reuse, repair, upgrading, remanufacturing, redistribution and product/service-systems.

The CIRCit research project will develop science-based tools and approaches with the aim of supporting the Nordic industry in its transition to a circular economy in six main areas:

- Business model innovation - including new offerings and value propositions
- Circular product design - for enhanced value creation
- Intelligent product operations - through the Internet of Things (IoT) and big data
- Closed loop strategies - based on product design and end-of-life/ use treatment possibilities
- Development of cross-sectoral collaborations and networking initiatives
- Sustainability evaluation - based on economic, environmental and social indicators

This poster will explain about CIRCit's approach to circular economy, the action research oriented approach through working with businesses and the integrated manner in which the tool-kit is being developed.

CIRCit is a collaboration between the Technical University of Denmark (DTU), the Norwegian University of Science and Technology (NTNU), Technology Industries of Finland, SWEREA and the Innovation Center Iceland. CIRCit is supported by the Nordic Green Growth Initiative, a joint programme supported by NordForsk, Nordic Energy Research and Nordic Innovation.